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reservoir 65 to which an intake means 48 for the feed pump 23 is connected, the pump delivering the cleaning fluid through a conduit 50 to a filter means 24 according to FIG. 7. Further details will be explained with reference to FIGS. 7 and 8.

To perform the cleaning cycle, the shaving apparatus 1 to be cleaned is introduced into the cleaning device 5 from the side and subsequently locked in place by the switching means 9 which, initially occupying its upper position, is for this purpose displaced downwards into a second position until the two contact lugs engage the contact pins 12 provided in the shaving apparatus 1. The shaving apparatus 1 is thereby interlocked electrically and mechanically, allowing the operator to withdraw the shaving apparatus 1 not until after the cleaning and the subsequent drying cycle have been completed, canceling the interlock.

Operation of the switching means 9 causes the feed pump 23 to be driven which then delivers cleaning fluid to the cradle 7 and to the shaving head 3 for a pre-determined period of time, the fluid dislodging all of the hair dust 75 in the shaving head 3 (see segment 30 to 31 in FIG. 4).

The cleaning fluid with the hair dust 75 is then passed through the outlet port 27 to the cradle 7 and over the overflow device 26 to the collecting reservoir 65, and onwards directly to the feed pump 23 through the intake means 48 and back to the filter 24. This has the advantage that the cleaning fluid with the complete hair dust 75 from the shaving apparatus 1 is delivered in concentrated form to the filter 24 in which the cleaning fluid is completely cleaned.

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FIG. 3 shows schematically in top plan view the arrangement of the essential parts of the cleaning device 5 including, for example, the collecting reservoir 65 and a motor 28 which is turned on by the switching means 9. When viewing this Figure, there is shown to the right of the bracket 10 supporting the shaving apparatus 1 the electric control device 29 including timing elements, not shown, for controlling the individual stages of the cleaning cycle. Further arranged in the area of the bracket 10 is the motor 28 adapted to drive directly the impeller 16 which is operatively associated with a heating means for heating the air used for drying the shaving apparatus 1.

To be able to step the line voltage down to the requisite operating voltage, the cleaning device 5 is provided with a transformer 36.

FIG. 4 is a schematic diagram depicting the individual stages of the cleaning cycle as a function of time. The individual segments between points 30 to 34 show the individual cyclic stages of the cleaning operation.

When, as initially mentioned, the switching means 9 is actuated at point 30 of FIG. 4 by downward displacement (control button depressed), this has the concurrent effect of causing oscillation of the inner cutters, not shown, of the shaving apparatus 1, thereby producing in the shaving head 3 a flow with partially occurring cavitation which dislodges hair dust 75 and also grease particles from the inner cutters of the shaving head completely. Owing to the fluid being agitated, the fluid level in the cradle 7 is temporarily increased, while at the same time splashes are produced in the area of the shaving head 3 performing a thorough cleaning function on

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the shaving head 3 as well as the inner cutters although the level of the cleaning fluid reaches only part of the shaving head 3. Depending on the type of cleaning fluid utilized and the degree of contamination of the shaving head, the cleaning action lasts between 3 and 60 seconds (see segment a between points 30 and 31). When the shaving apparatus 1 is not cleaned at regular intervals, the cleaning cycle (segment a between points 30 and 31) is extended correspondingly. To accomplish this, the cleaning device may be provided with a two-step switch not shown in the drawings, the first step being intended for a regular cleaning cycle and the second step for an intensive cleaning cycle.

On completion of the cleaning cycle, the feed pump 23 is automatically turned off at point 31 (end of the cleaning cycle) of FIG. 4. This then enables the cleaning fluid to be drained completely through the outlet port 27, thus causing the wet portion of the cradle 7 to be evacuated. The level in the collecting reservoir 65 rises a small amount. The outlet port 27 may also be closable by a valve, not shown in the drawings, which opens automatically when point 31 is reached. After about 30 seconds, the cradle 7 is completely emptied (see segment b between points 31 and 32, draining the cradle 7).

After the cradle 7 is drained at point 32, the shaving head 3 continues oscillating for some time, shaking off any cleaning fluid that may still adhere to the shaving head 3. After the set time has elapsed, the shaving apparatus 1 is turned off, and the inner cutter of the shaving head 3 stops moving at point 33 (end of the vibratory cycle). The turn-on and turn-off operations

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are accomplished by means of an electromagnetic reed switch 95 shown schematically which, according to FIG. 1, is accommodated in the housing 2 of the shaving apparatus 1. When the reed switch 95 is opened automatically on completion of the vibratory cycle, operation of the shaving apparatus 1 is also discontinued, initiating at point 33 the drying cycle described in the following (segment d).

Being automatically inserted in the circuit at point 33, the impeller 16 is turned on with or without heating means and driven by the electric motor 13, thus delivering dry air to the shaving head 3 for a predetermined period of, for example, 15 seconds (see segment d between points 33 and 34). Then the interlock of the shaving apparatus 1 is deactivated at the control button 9.

FIG. 6 shows schematically the fluid circuit of the cleaning fluid of the cleaning device 5 which incorporates the cradle 7 in which the shaving apparatus 1 is inserted in an inverted position so that the shaving head 3 is at least partially immersed in the cleaning fluid.

The cleaning device 5 further incorporates (FIG. 6) the feed pump 23 and the motor 28 connected to a supply of electricity through electrical lines and activatable by the switching means 9. The feed pump 23 is driven by the motor 28 adapted to bear against supporting means in the casing 4 of the cleaning device 5.

A drive shaft 43 projecting from the motor 28 drives the feed pump 23 provided in a pump casing.

As becomes further apparent from FIG. 6, the collecting reservoir 65 for receiving the cleaning fluid

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40 is smaller than in the first embodiment of FIG. 1. The collecting reservoir 65 has a bottom 47 arranged at an inclination, for example, at an angle of between 20° and 40° to prevent hair particles from collecting at the bottom 47. An intake means 48 of the feed pump 23 is attached to the lower area of the bottom 47, so that the cleaning fluid discharged over the overflow device 26 is conveyed, through the collecting reservoir 65, the intake means 48 of the feed pump 23 as well as a conduit 50, directly to the filter 24 illustrated in greater detail in FIGS. 7, 8 and 9. The hair dust 65 collecting in the reservoir 65 is agitated in the cleaning fluid such that it is fed to the filter 24 and retained thereby, rather than being allowed to settle at the bottom 47 of the collecting reservoir 65. The filtered cleaning fluid is then circulated back to the cradle 7 through a conduit 64.

A cleaning fluid container 61 is configured as a cartridge (FIGS. 7 to 9) and includes an outlet port 63 communicating with the cradle 7 through the conduit 64. In this manner, the cleaning circuit is closed. The container 61 inlet and outlet ports 62, 63 shown in FIG. 7 may also be provided at a bottom 67 of the cleaning fluid container 61, enabling the cleaning fluid container 61 to be connected to suitable conduits from above. It is thereby achieved that a permanent flow of cleaning fluid is delivered from the cleaning fluid container 61 to the intake means of the pump 23, causing the pump to draw only cleaning fluid, rather than air, when put into operation.

According to this embodiment (FIG. 6), the switching means 9 activates the feed pump 23 configured as a vane-

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type pump drawing air at the beginning of the cleaning cycle and forcing this air through the conduit 50 into the cleaning fluid container 61 so that the cleaning fluid flows from the cleaning fluid container 61 through the outlet port 63 and the conduit 64 to the drained cradle 7, refilling it until the cleaning fluid is discharged to the collecting reservoir 65 over the overflow device 26. Part of the fluid is continuously drained through the outlet port 27. Considering, however, that the feed pump 23 delivers more fluid to the cradle 7 than can be drained through the outlet port 27, it is ensured that during the cleaning cycle the cradle 7 remains filled with fluid to the level of the overflow device 26.

The cleaning fluid container 61 or cartridge shown in FIGS. 7 to 9 is comprised of a cylindrical casing 101 having a bottom 67 and a lid 72 in which the inlet port 62 and the outlet port 63 as well as the filter 24 are provided.

The lid 72 is sealed relative to the upper rim of the cleaning fluid container 61 by hemming such as to prevent it from being pulled off the casing 101. The conduit 50 arriving from the pump 23 is connected to the inlet port 62, while the conduit 64 leading to the cradle 7 is connected to the outlet port 63. Quick-release coupling members, not shown in the drawings, may be provided in the area of the inlet and outlet ports 62, 63 to allow ready replacement of the cleaning fluid container 61 when it is necessary to renew the cleaning fluid or when the filter 24 provided in the cleaning fluid container 61 has become clogged.

The degree of contamination or the hair dust 75 retained in the filter 24 may be determined by means of an

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indicating device not shown in the drawings. The indicating device may include a pressure sensor and a tell-tale light indicating the degree of contamination or the pressure status. When the filter 24 is no longer usable, the cleaning fluid container 61 is detached from the conduits 50, 64, and a new one is substituted.

In the embodiment of FIGS. 7 to 9, the filter means 24 is configured as a cylindrical paper filter arranged coaxially in the casing 101.

According to FIG. 8, the filter 24 is forced with a lower end 70 thereof into engagement with an annular groove 68 provided at the bottom 67 of the casing 101 coaxially therewith. The annular groove 68 is comprised of two relatively spaced parallel annular walls or hem flanges 69, 71 projecting from the bottom 67 so that the lower end 70 of the filter 24 is clampingly engaged within the annular groove 68. The filter 24 forms a first chamber receiving the hair dust, while the remaining part of the casing forms a second chamber for holding filtered cleaning fluid.

As becomes apparent from FIG. 9, the upper lid 72 of the casing 101 of the cleaning fluid container 61 includes four relatively spaced locating means 73 arranged in cross shape and serving to locate the filter within the cleaning fluid container 61.

The lid 72 (FIGS. 7, 9) further includes a foil 74 which is pierced by the conduits 50, 64 as the cleaning fluid container 61 is inserted in the casing 4, thereby establishing the coupling engagement with the inlet and outlet ports 62 and 63, respectively. Conveniently, the two conduits 50, 64 may be provided with a sharp edge or

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tip 103 at their respective ends to facilitate piercing of a foil sealing the ports 62, 63. It is also possible to seal the ports 62, 63 by means of a pull-off strap under which sealing members capable of being pierced may be provided into which the conduits 50, 64 are inserted.

FIGS. 5, 10 and 11 illustrate a mechanism 78 for driving the impeller 16 and the feed pump 23. Since it is not desirable to drive the feed pump 23 and the impeller 16 at the same time, they may be driven selectively by the single motor 28. The drive mechanism 78 which also includes the motor 28 is provided with a device reversing the direction of rotation which includes one (FIG. 12) or, according to FIGS. 5 and 11, two overrunning devices 104, one driving the impeller 16 in a clockwise direction, the other driving the feed pump 23 in a direction opposite thereto.

The device reversing the direction of rotation, together with the upper and the lower overrunning device 104, is seated on a motor output shaft 79 of the motor 28 on which also the impeller 16 is arranged. The overrunning device 104 may be provided with a clamp-type locking mechanism including for this purpose a one-way coupling with self-locking frictional engagement. Further, clamping rollers or clamping plates may be provided as coupling means. In the embodiment of FIGS. 11 and 12, the overrunning devices 104 are comprised of internal gear rings 105, 106 having an upper and a lower tooth flank 86. The two internal gear rings 105, 106 are mounted on the motor output shaft 79 so as to rotate freely. The motor output shaft 79 drives a driving flange 81 which includes two diametrically opposite pawl axles 82 receiving each an upper and a lower crescent-

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shaped pawl 83, 90. The pawls 83, 90 include each two lever arms 108, 109 of different length (FIG. 11), with the longer lever arm 108 being guided in a slotted hole 88 by means of a pin 96, while the other lever arm 109 bears against a spring 84. FIGS. 5 and 11 show each one slotted hole 88.

The pawl 83 (FIG. 11) is pivotal on the pawl axle 82 in the direction of the inner periphery of the impeller 16 between a position shown in solid lines and a position shown in broken lines by means of the spring 84 bent twice in V-shape. The spring 84 includes a U-shaped member 110 by means of which it is seated on a hub 97 of the driving flange 81. The U-shaped member 110 is formed of two legs 111 which, each in combination with a further adjoining leg 112, form a double V.

In the position illustrated in FIG. 11, the two pawls 83 have an outer end 85 thereof in engagement with the tooth flanks 86 of the gear ring 105 connected to the impeller 16, thus establishing a driving relationship, in a clockwise direction, of the motor 28 to the impeller 16. The legs 112 of the spring 84 urge, through an abutment means, the end 85 of the lever arm 108 into engagement with the tooth flank 86.

When the motor output shaft 79 is driven in a counterclockwise direction, the pawls 83 are urged outwardly by the tooth flanks 86 and, at a minimum rotational frequency, are pivoted on the pawl axle 82 outwardly in a clockwise direction in opposition to the action of the spring 84 owing to their eccentric arrangement on the pawl axle 82, until they engage a stop 89 of the slotted hole 88. This is accomplished in that the weight component of the lever arm 108 is greater than that of

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the other lever arm 109 of the pawl 83 relative to the pawl axle 82. As a result, the impeller 16 is disengaged from the motor output shaft 79. This position is maintained until the centrifugal moment has diminished due to a reduced rotational frequency to a level at which the spring moment prevails and the pawls 83 return to their engaged positions according to FIG. 11 (see the position of pawl 83 shown in solid lines).

By driving the motor output shaft 79 in a manner similar to the mode of operation of FIG. 11, yet in a counterclockwise direction, two further pawls 90 arranged below the driving flange 81 are then equally pivoted on the pawl axles 82 by means of the spring 84, their ends 85 engaging the tooth flanks 86, so that the pump 23 is operated by the same motor 28 and by a hollow shaft 107 disposed on the motor output shaft 79, whereas the two upper pawls 83 are maintained disengaged. At the beginning of the cleaning operation, only the pump 23 is driven according to FIG. 11, and the impeller 16 is released according to FIG. 5.

The two lower pawls 90 do not leave their engaged positions, thereby canceling the driving relationship of the motor 18 to the feed pump 23, until the direction of rotation of the motor 28 is changed. Because the outer ends of the pawls 83, 90 do not slip over the tooth flanks 86, noise and wear are prevented from occurring with the pawls 83, 90 running freely.

Owing to the advantageous driving relationship for selectively driving the feed pump 23 and the impeller 16, the requirement of having to provide a second drive motor for driving feed pump 23 and impeller 16 separately is obviated, so that cost savings may be realized.

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The motor 28 and the impeller 16 as well as the pump 23 not shown in FIGS. 5, 10 and 11 and, if desired, the cleaning fluid container 61 may be arranged vertically on a common axis, which enables the number of gear parts between the motor 28, the pump 23 and the impeller 16 to be reduced to a minimum and, in consequence, allows the casing 4 of the cleaning device 5 to be built to smaller dimensions (see FIG. 12).

A further embodiment of a drive mechanism for the pump 23 and the drying device incorporating the impeller 16 is illustrated in FIG. 12.

In this embodiment, an overrunning arrangement 78 similar to the overrunning device of FIG. 11 comprises only two pawls 83 or some other coupling means. The coupling means establish a driving relationship between the motor 13 and the pump 23 or prevent the pump 23 from following the motor 13 in rotation when its direction of rotation is reversed. It will be understood that an overrunning arrangement configured in a manner different from the one shown in FIG. 11 may also be utilized.

When the overrunning arrangement establishes a driving connection between the motor 13 - rotating, for example, in a counterclockwise direction - and the pump 23, the pump 23 is driven jointly with the impeller 16, and the pump 23 is in a position to direct cleaning fluid to the cradle 7.

The impeller 16 is prevented from drawing air from the cradle 7 because a louvered shutter 149 provided in the opening 18 remains closed as a result of the vacuum produced by the impeller 16.

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Because of the very simple configuration of the overrunning arrangement, the electric motor 13 invariably drives the impeller 16 in either direction, so that with the motor 13 driven in a clockwise direction the air stream produced by the impeller 16 opens the louvered shutter 149 provided in the opening 18, feeding air to the shaving head 3 for drying.

When the motor 13 is driven in a counterclockwise direction, the stream of air produced by the then equally driven impeller 16 generates a vacuum in the area of the opening 18, causing the louvered shutter 149 to be closed again or to remain closed.

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## Patent Claims

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1. A cleaning device (5) for cleaning the shaving head (3) of a dry shaving apparatus (1), with a cradle structure (7) adapted to receive therein the shaving head (3), a cleaning fluid container (61) holding a cleaning fluid, as well as a device (23) adapted to be driven by a motor (28) for feeding the cleaning fluid, characterized in that the cleaning fluid container (61) is separable from the cleaning device (5) and includes a filter means (24) integrally formed therewith.
  2. A cleaning device as claimed in claim 1, characterized in that the cleaning fluid container (61) is comprised of two chambers, one chamber serving to hold the cleaning fluid, the other chamber being configured as the filter means (24).
  3. A cleaning device as claimed in claim 2, characterized in that the chambers are closed relative to the outside and are directly or indirectly connected to conduits (50, 64) of the feed pump (23) and the cradle structure (7) in a releasable manner.
  4. A cleaning device as claimed in claim 1, characterized in that the cleaning fluid container (61) or the chambers include ports (62, 63) or releasable connecting or coupling members which are adapted to be inserted in and/or clamped and sealed relative to mating members.
  5. A cleaning device as claimed in claim 1 or claim 2, characterized in that at least one of the conduits (50, 64) has a tip (103) at its end, and that the cleaning fluid container (61) and/or the ports (62, 63)
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are closable by means of a foil or a laminate (74) through which the conduits (50, 64) are insertable.

6. A cleaning device as claimed in claim 4, characterized in that a sealing member each is provided in the ports (62, 63) of the cleaning fluid container (61), said sealing members being adapted to be pierced by the respective ends of the conduits.

7. A cleaning device as claimed in claim 1, characterized in that the cleaning fluid container (61) has at its end locating means (73) for aligning and laterally supporting the filter means (24) in the interior of the cleaning fluid container (61).

8. A cleaning device as claimed in claim 7, characterized in that the locating means (73) are configured as rib means provided in the lid (72) of the cleaning fluid container (61).

9. A cleaning device as claimed in claim 7, characterized in that the filter means (24) is fixedly and coaxially arranged within the casing (101) of the cleaning fluid container (61) between the coaxially arranged inlet port (62) and the bottom (67) of the casing (101).

10. A cleaning device as claimed in claim 7, characterized in that the filter means (24) is comprised of a filter tube including a fabric or a mat material and extending along the full height of the casing (101).

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11. A cleaning device as claimed in claim 7, characterized in that the filter means (24) is coaxially secured in the casing (101) at both its ends by the locating means (73).

12. A cleaning device as claimed in claim 7, characterized in that at one end the filter means (24) is centrally located and fixedly received in an annular groove (68) provided at the bottom (67) of the casing (101).

13. A cleaning device as claimed in claim 12, characterized in that the annular groove (68) is comprised of a wall or hem flange (69, 71) disposed at the bottom (67) of the casing (101) at right angles thereto.

14. A cleaning device as claimed in claim 7, characterized in that the one end of the conduit (50) connected to the outlet means of the feed pump (23) is sealingly insertable into the inlet port (62) coaxially arranged in the lid (72) and the adjoining filter means (24) equally coaxially arranged, and that the second conduit (64) provided in the cleaning fluid container (61) and connected to the cradle structure (7) or indirectly to the intake means of the feed pump (23) is sealingly insertable into the outlet port (63) of the lid (72).

15. A cleaning device as claimed in one or several of the preceding claims, characterized in that the cleaning fluid container (61) is adapted to be integrated and fixedly secured in a wall mount (38) in which the shaving apparatus (1) is insertable from the side and is mechanically and/or electrically interlockable by a switching means (9).

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16. A cleaning device as claimed in one or several of the preceding claims, characterized in that the shaving apparatus (1) is receivable in a cradle structure (7) that is open towards atmosphere and is supplied with cleaning fluid from the outwardly closed cleaning fluid container (61) by means of the feed pump (23).

17. A cleaning device as claimed in one or several of the preceding claims, characterized in that the shaving apparatus (17) is first supplied with cleaning fluid from the cleaning fluid container (61) integrated into the wall mount (38) by means of the feed pump (23), and is subsequently dried by means of an impeller (16) integrated into the cleaning device (5), with the feed pump (23) and the impeller (16) being adapted to be driven selectively in a clockwise or counterclockwise direction by means of a single motor (28) using an overrunning device (104).

18. A cleaning device as claimed in one or several of the preceding claims, characterized in that the feed pump (23), the motor (28) and/or the impeller (16) and the cleaning fluid container (16) are disposed in coaxial alignment with each other wholly or at least approximately and/or are mounted in the casing (4) of the wall mount (38) or the cleaning device (5).

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#### Abstract of the Disclosure

The invention is directed to a cleaning device 5 for cleaning the shaving head 3 of a dry shaving apparatus 1, with a cradle structure 7 adapted to receive therein the shaving head 3, a cleaning fluid container 61 holding a cleaning fluid, as well as a device adapted to be driven by a motor 28 for feeding the cleaning fluid, wherein the cleaning fluid container 61 is separable from the cleaning device 5 and includes a filter means 24 integrally formed therewith.

(FIG. 1)

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BIRGIT HUBATSCH

staatl. gepr. Übersetzerin für Englisch (BDÜ)  
allgem. vereidigt für Gerichte und Notare im Lande Hessen

Elisabethenstraße 33a . D-64390 Erzhausen . Telefon/Telefax (06150) 7438

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IN THE MATTER OF  
German Patent Application  
Serial No. P 44 02 237.9-23  
Braun Aktiengesellschaft

DECLARATION

I, Birgit Hubatsch, of Elisabethenstr. 33a, D-64390 Erzhausen, Federal Republic of Germany, hereby declare that I am conversant with the English and German languages and am a competent translator thereof, duly sworn for the Law Courts and Public Notaries of Land Hesse. I also declare that I am the translator of the documents attached and certify that the following is a true and accurate translation from the German original into the English language to the best of my knowledge and belief.

Dated this 8th day of December 1994



*Birgit Hubatsch*

Birgit Hubatsch  
Sworn Translator

08/370681

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6.28.95

# BUNDESREPUBLIK DEUTSCHLAND



## Bescheinigung

Die Braun Aktiengesellschaft in 60326 Frankfurt hat eine Patentanmeldung unter der Bezeichnung

"Reinigungsvorrichtung zur Reinigung des Scherkopfs eines Trockenrasierapparats"

am 26. Januar 1994 beim Deutschen Patentamt eingereicht.

Die angehefteten Stücke sind eine richtige und genaue Wiedergabe der ursprünglichen Unterlagen dieser Patentanmeldung.

Die Anmeldung hat im Deutschen Patentamt vorläufig die Symbole A 45 D 27/46, A 45 D 27/48, B 26 B 19/40, F 04 B 23/02 und B 01 D 35/027 der Internationalen Patentklassifikation erhalten.

München, den 18. Oktober 1994  
Der Präsident des Deutschen Patentamts  
Im Auftrag

Röske

Aktenzeichen P 44 02 237.9



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5-9-95  
#5  
A/W

PATENT  
ATTORNEY DOCKET NO. 02894/285001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE 3405

Applicant : Gebhard Braun  
Serial No.: 08/370,681  
Filed : January 10, 1995  
Title : CLEANING DEVICE FOR CLEANING THE SHAVING HEAD OF A DRY SHAVING APPARATUS

Art Unit:  
Examiner: *STANSON*

Commissioner of Patents and Trademarks  
Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO 1449, copies of which are enclosed.

This statement is being filed before the receipt of a first Office action on the merits. I, the undersigned, hereby certify that each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart foreign application, dated March 23, 1995, which is not more than three months prior to the filing of this statement.

Date of Deposit MAY 8, 1995  
I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.


HINSON, DEPT  
Kinda Weg

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Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: May 8, 1995



Eric L. Prahl  
Reg. No. 32,590

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804

Telephone: 617/542-5070  
Facsimile: 617/542-8906  
124905.811

Sheet 1 (A) of 1

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 02894/285001		SERIAL NO. 08/370,681	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))				APPLICANT Gebhard Braun			
				FILING DATE January 10, 1995		GROUP	

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER	ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<i>JW</i>	AA	5 0 6 4 5 2 1	11/21/91	Stepanenko, et al.	204	224 M	
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

## FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
<i>JW</i>	AL	GB-A-0 337 132	11/20/30	United Kingdom				
	AM	GB-A-2 129 732	05/23/84	United Kingdom				
	AN	GB-A-1 206 791	09/30/70	United Kingdom				
<i>JW</i>	AO	GB-A-1 206 792	09/30/70	United Kingdom				
	AP							

## OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

<i>JW</i>	AQ	A copy of a European Search Report dated March 23, 1995
	AR	
	AS	

EXAMINER

FRANKIE L. STINSON  
PRIMARY EXAMINER

DATE CONSIDERED

9/14/95

EXAMINER: Initial citation considered. GROUP 2400 through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form (PTO-1449)

B000081


**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

 Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/370,681 01/10/95 BRAUN

G 02894/285001

STINSON, J. EXAMINER

34M1/1027

ART UNIT PAPER NUMBER

 WILLIS M ERTMAN  
FISH AND RICHARDSON  
225 FRANKLIN STREET  
BOSTON MA 02110-2804

3405

DATE MAILED: 10/27/95

 This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

 A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.                  |
| 5. <input checked="" type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____  |

**Part II SUMMARY OF ACTION**

1. ☐ Claims 1-12 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-5 and 7-13 are rejected.
5. ☒ Claims 6, 14-16 are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☒ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☒ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

PTOL-328 (Rev. 2/93)

B000082

Serial Number: 08/370,681

-2-

Art Unit: 3405

A. Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Re claim 1, lines 1-2, the phrase "the shaving head" is without proper antecedent basis. This is also applicable to the phrase "the feed pump" in claim 3, line 4.

B. Claims 15-18 are objected to under 37 C.F.R. § 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See M.P.E.P. § 608.01(n). Accordingly, these claims have not been further treated on the merits.

C. As for what was understood, the following is provided.

D. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

E. Claims 1-5 and 7-13 are rejected under 35 U.S.C. § 103 as being unpatentable over Lee. Re claim 1, the patent to Lee is



Serial Number: 08/370,681

-3-

Art Unit: 3405

cited disclosing a cleaning device for cleaning an article comprising a cradle adapted to receive the article therein, a cleaning fluid container for holding cleaning fluid, a driven device for feeding cleaning fluid and a cleaning device being separable from the fluid container that differs from the claim only in the recitation of the cleaning of a shaving head. Nonetheless, the intended use is not deemed to structurally define over Lee. Re claim 2, Lee discloses the two chambers. Re claim 3, Lee discloses the chambers as being closed. Re claim 4, Lee discloses the releasable coupling means. Re claim 5, Lee discloses the container as being closed. To have it closed with foil or a laminate is deemed to be an obvious matter of design. Re claim 7, Lee discloses the aligning means. To have the aligning means in the form of rib means, is an obvious matter of design. No new nor unobvious result are seen. Re claims 9, 11 and 12, Lee discloses the filter as being fixed and coaxial. As for the material of the filter as claimed in claim 10, to employ filter material as instantly claimed is an obvious matter of design. This is also applicable to the groove as claimed in claim 13.

F. Claims 6 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Serial Number: 08/370,681

-4-

Art Unit: 3405

G. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In Riolo, Browning, Schinn, Dewitt, Swiss'936, Beech, Elledge, Otzen and Plourde, note the containers.

H. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F.L.Stinson whose telephone number is (703) 308-0861.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.



fls

Frankie L. Stinson

Primary Examiner

ART UNIT 3405

Form PFC 94B (Rev. 10-94)

U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office

Application No.

## NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 11/19/93 are \_\_\_\_\_  
 \$\_\_\_\_\_ not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.  
 \$\_\_\_\_\_ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as  
 indicated below. The Examiner will require submission of new, corrected  
 drawings when necessary. Corrected drawings must be submitted  
 together to the institutions on the back of this Notice.

1. DRAWING: 37 CFR 1.84(a): Acceptable categories of drawings:  
 (1) Pencil; (2) Ink; (3) Color.

Color drawings are not acceptable until petition is granted.

1. *Procedural*—the proposed modification is granted.

[illegible][illegible]

sample of the sample used by the original authors. (Fig(s).....)

— **Finish:** for location, strong, white, smooth, nonshiny, and durable.

Figure 4. Comparison of the results of the two methods. The results of the two methods are compared for the same data set. The results of the two methods are compared for the same data set. The results of the two methods are compared for the same data set.

2) 6 cu. by 15.5 cu. (H 1/2 by 14 inches)  
3) 6 cu. by 31 cu. (H 1/2 by 13 inches)  
4) 6 cu. by 61 cu. (H 1/2 by 11 inches)

7) Drawing sheets not the same size. Sheet(s) \_\_\_\_\_  
 Drawing sheet not an acceptable size. Sheet(s) \_\_\_\_\_

6. MARGINS: 3/4" CIP: 1.84(g): Acceptable margins:  
Paper size

21.6 cm. X 35.6 cm.	21.6 cm. X 33.1 cm.	21.6 cm. X 27.9 cm.	21.0 cm. X 29.7 cm.
(8 1/2" X 14 inches)	(8 1/2" X 13 inches)	(8 1/2" X 11 inches)	(DIN Size A4)
21.6 cm. (8 1/2")	21.6 cm. (8 1/2")	21.6 cm. (8 1/2")	21.0 cm. (8 1/4")
35.6 cm. (14")	33.1 cm. (13")	27.9 cm. (11")	29.7 cm. (11 3/4")

2. 54 cm. (1 1/4")	61 cm. (1 3/4")	64 cm. (1 1/4")	25 cm.
4. 54 cm. (1 1/4")	64 cm. (1 1/4")	64 cm. (1 1/4")	1.5 cm.
15. 54 cm. (1 1/4")	64 cm. (1 1/4")	64 cm. (1 1/4")	1.0 cm.

Margins do not conform to chart above.  
Sheet(s) \_\_\_\_\_  
\_\_\_\_ Top (T) \_\_\_\_ Left (L) \_\_\_\_ Right (R) \_\_\_\_ Bottom (B)

REMARKS: Specification may require revision to correspond drawing changes.

Fig(s) \_\_\_\_\_

Partial views. 57 C.R. 1.84(h) 2

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ATTACHMENT TO PAPER NO. \_\_\_\_\_

View and enlarged view not labeled separately or properly.  
Fig(s) \_\_\_\_\_  
Sectional views. 37 CFR 1.84 (h) 3  
Hatching not indicated for sectional portions of an object.  
Fig(s) \_\_\_\_\_  
Cross section not drawn same as view with parts in cross section  
with regularly spaced parallel oblique strokes. Fig(s) \_\_\_\_\_

**ARRANGEMENT OF VIEWS.** 37 CFR 1.84(i)  
 — Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) \_\_\_\_\_

SCALE. 37 CFR 1.84(k)

- Scale not large enough to show mechanism with crowding when drawing is reduced to size to two-thirds in reproduction Fig(s) \_\_\_\_\_
- Indication such as "actual size" or scale 1/2" not permitted. Fig(s) \_\_\_\_\_

✓ Lines, numbers & letters not uniformly thick and well placed.  
clean, slightly blue, no signs of color, staining?  
Notes: 612

1. SOLID: 37 CFR 1.84(h)  
 Solid black shading areas not permitted.  
 Fig(s) \_\_\_\_\_  
 Shade lines, pale, rough and blurred. Fig(s) \_\_\_\_\_

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(c)

- \_\_\_ Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s) \_\_\_\_\_
- \_\_\_ Numbers and reference characters not oriented in same direction as the view. 37 CFR 1.84(p)(4) Fig(s) \_\_\_\_\_
- ✓ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s) \_\_\_\_\_
- \_\_\_ Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR(p)(3) Fig(s) \_\_\_\_\_

13. LEAD LINES. 37 CFR 1.84(q)  
 \_\_\_\_\_ Lead lines cross each other. Fig(s) \_\_\_\_\_  
 \_\_\_\_\_ Lead lines missing. Fig(s) \_\_\_\_\_

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(i)  
 \_\_\_\_\_ Sheets not numbered consecutively, and in Arabic numerals,  
 \_\_\_\_\_ sheets with number(s) \_\_\_\_\_ Sheet(s) \_\_\_\_\_

15. NUMBER OF VIEWS. 37 CFR 1.84(b)  
 \_\_\_\_\_ Views not numbered consecutively, and in Arabic numerals,  
 beginning with number 1. Fig(s) \_\_\_\_\_  
 \_\_\_\_\_ View numbers not preceded by the abbreviation Fig.  
 Fig(s) \_\_\_\_\_

16. CORRECTIONS. 37 CFR 1.84(w)  
 \_\_\_\_ Corrections not made from prior PTO-948.  
 Fig(s)

17. DESIGN DRAWING. 37 CFR 1.152  
 \_\_\_\_\_ Surface shading shown not appropriate. Fig(s) \_\_\_\_\_  
 \_\_\_\_\_ Solid black shading not used for color contrast.  
 Fig(s) \_\_\_\_\_

COMMENTS:

ATTACHMENT TO EXPR NO. \_\_\_\_\_

REVIEWER

DATE \_\_\_\_\_

B000080

110 - 115

GP 3/405



PATENT  
ATTORNEY DOCKET NO. 02894/285001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gebhard Braun  
Serial No.: 08/370,681  
Filed : January 10, 1995  
Title : CLEANING DEVICE FOR CLEANING THE SHAVING HEAD OF A  
DRY SHAVING APPARATUS

Art Unit: 3405  
Examiner: F. Stinson

Commissioner of Patents and Trademarks  
Washington, DC 20231

PETITION FOR EXTENSION OF TIME

Pursuant to 37 C.F.R. §1.136, applicant hereby petitions that the period for response to examiner's action mailed October 27, 1995, be extended for one month to and including February 27, 1996.

Enclosed is a check for \$110.00 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050.

Respectfully submitted,

Date: February 26, 1996

Eric L. Prah  
Reg. No. 32,590  
Frank R. Occhiuti  
Reg. No. 35,306

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804

Telephone: 617/542-5070  
Facsimile: 617/542-8906  
155234.811

Date of Deposit February 26, 1996  
I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

  
Megan O'Meara

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PATENT  
ATTORNEY DOCKET NO. 02894/285001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gebhard Braun                      Art Unit: 3405  
Serial No.: 08/370,681                      Examiner: F. Stinson  
Filed : January 10, 1995  
Title : CLEANING DEVICE FOR CLEANING THE SHAVING HEAD OF A  
         DRY SHAVING APPARATUS

Commissioner of Patents and Trademarks  
Washington, DC 20231

RESPONSE

In response to the Examiner's action mailed October 27,  
1995, please amend the application, as follows:

In the claims:

sub  
B1  
A  
1. (Once Amended) A cleaning device [(5)] for  
cleaning a [the] shaving head [(3)] of a dry shaving apparatus  
[(1)], said cleaning device comprising: [with] a cradle structure  
[(7)] adapted to receive therein the shaving head [(3)], a  
cleaning fluid container [(61)] for holding a cleaning fluid, [as  
well as a device (23) adapted to be driven by a motor (28) for  
feeding the cleaning fluid, characterized in that the] a filter,  
and a fluid feed mechanism which feeds the cleaning fluid after  
it passes through the filter to the shaving head during cleaning,  
said container and filter being [is] separable from the cleaning  
device [(5) and] as a unit [includes a filter means (24)  
integrally formed therewith].

Date of Deposit February 26, 1996  
I hereby certify under 37 CFR 1.8(a) that this correspondence  
is being deposited with the United States Postal Service as  
first class mail with sufficient postage on the date indicated  
above and is addressed to the Commissioner of Patents and  
Trademarks, Washington, D.C. 20231.

Megan O'Meara  
Megan O'Meara

1000088

2. (Once Amended) A cleaning device as claimed in claim 1, [characterized in that] wherein the cleaning fluid container [(61)] is comprised of two chambers, one chamber serving to hold the cleaning fluid, the other chamber being configured as the filter [means (24)].

A 3. (Once Amended) A cleaning device as claimed in claim 2, [characterized in that] further comprising a first conduit which releasably couples the chamber holding the cleaning fluid to the cradle structure and a second conduit which releasably couples the chamber configured as the filter to the fluid feed mechanism, and wherein the chambers are closed relative to the outside of the cleaning fluid container with fluid communication to and from the container provided through the conduits [and are directly or indirectly connected to conduits (50, 64) of the feed pump (23) and the cradle structure (7) in a releasable manner].

6. (Once Amended) A cleaning device as claimed in claim 1, [characterized in that] wherein the cleaning fluid container includes [(61) or the chambers include] ports through which cleaning fluid passes in and out of the cleaning fluid container [(62, 63) or releasable connecting or coupling members which are adapted to be inserted in and/or clamped and sealed relative to mating members].